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ABSTRACT

A conceptual model of learning environments and the procedures necessary for its investigation are proposed. It is argued that a research agenda involving longitudinal, comparative case-study designs and using field-method techniques is the only method capable of generating a solid base of information on the relationship between structural properties, social relationships, and learning outcomes. Thus, the importance of conceptual formulation and methodological procedures is illustrated. While numerous observational schemes are available for studying classroom environments, their adequacy has been limited by naive and simplistic conceptualizations of the social processes of learning. By focusing on dyadic interactions or only one aspect of social organization (e.g., peer networks or reward systems), research on schooling has overlooked the complex interrelationships between structural properties and social processes in learning environments. A complete model of the learning setting must detail the social organization and its consequences; that is, how particular structural characteristics of the setting affect the social relationships that develop in it and how different social relationships influence technical and moral socialization within schools. (Author/DB)

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STUDYING LEARNING ENVIRONMENTS:

Conceptual and Methodological Issues

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ABSTRACT

While numerous observational schemes are available for studying classroom environments, their adequacy has been limited by naive and simplistic conceptualizations of the social processes of learning. By focusing on dyadic interactions or only one aspect of social organization (e.g., peer networks or reward systems) research on schooling has overlooked the complex interrelationships between structural properties and social processes in learning environments. A complete model of the learning setting must detail the social organization and its consequences, that is, how particular structural characteristics of the setting affect the social relationships that develop in it and how different social relationships influence technical and moral socialization within schools.

A conceptual model of learning environments and the procedures necessary for its investigation will be proposed. It will be argued that a research agenda involving longitudinal, comparative case study designs and using field method techniques is the only method capable of generating a solid base of information on the relationship between structural properties, social relationships, and learning outcomes. Thus, the importance of conceptual formulation and methodological procedures will be illustrated.

STUDYING LEARNING ENVIRONMENTS:

Conceptual and Methodological Issues

Although there is a long and prolific tradition of theory and research in the sociology of education, few sociological examinations of schooling processes have been made. Most often, education (usually indicated by grade level attainment) is used to explain rates of social mobility, employment status, and income levels of various social groups. While this research has provided interesting analyses of systems of social stratification, it has not contributed significantly to our understanding of educative processes or of the nature of education as a social resource.[1] Moreover, studies that have examined schooling outcomes have provided little insight into the learning processes themselves. By using the "black box" approach, that is, by crudely measuring only input and output variables without exploring the nature of learning processes, these studies have failed to describe learning as a social activity--its outcomes influenced by the form of its social organization. In this paper, I will focus on examinations of classroom settings, reviewing some of the major research trends and proposing a conceptual model for the analysis of structure and process in learning environments.[2]

Classroom Research

Traditionally, sociological research on schooling has focused on two areas, the sociometric structure of a classroom

or school and the effects of "teacher style." A massive body of literature has been generated in these areas; however, it has not provided any comprehensive models for conducting school research nor contributed significantly to our understanding of social processes within schools and their effects on schooling outcomes.

The sociometric tradition began with studies of the relationship between pupil background characteristics, such as social class, and peer group networks. (See Neugarten, 1942; Dahlke, 1953; Lippitt and Gold, 1959.) Research has shown that children often choose friends within their own socioeconomic status group, and that this tends to reinforce existing educational aspirations within these groups. This early work, however, did not examine the possible effects of school organization on friendship choice, either in reinforcing segregation between groups or in influencing friendship choices within each social class grouping. Later studies have attempted to examine how particular sociometric patterns within a classroom or a school affect pupil achievement and self-concept. (See Grolund, 1953; Gran 1956; Schmuck, 1962.) This research has argued that a classroom with "good" sociometric structure will promote satisfying intragroup relations and, hence, create high levels of individual motivation for achievement and group performance; "good" sociometric structure being characterized by high rates of interpersonal contact, a lack of sharp cleavages within the group, the absence of isolate individuals, and strong leadership. Unfortunately, these sociometric studies have presented unclear

and often contradictory results. They also have failed to examine the link between structural characteristics of the learning environment and the development of peer networks. The emergence of a particular classroom sociometric structure is usually attributed to the social and personality characteristics of class members; however, as research on small groups has pointed out, group sociometric structure is influenced strongly by such structural characteristics as a group's task organization and reward system. (See Homans, 1950; Woodward, 1958; Borgatta and Bales, 1953; Miller and Hamblin, 1963; Sayles, 1958.) To understand the relationship between group organization and schooling outcomes, the structural arrangements that affect intragroup relations must be examined. The sociometric research on schools has not examined these links, hence it provides us with an incomplete model for analyzing structure and process in learning environments.

The second major tradition in classroom research has been the teacher "style" and "effectiveness" studies. Initially, this research followed an experimental design, i.e. different styles of teaching were tested in experimental group settings. The most noted example of this research is Lewin, Lippitt, and White's (1939) work on leadership. They attempted to examine the relationship between three types of leadership roles--authoritarian, democratic, and laissez-faire--and children's behavior in small, experimental task groups. Later research, though, has used naturalistic observation (Medley and Mitzel, 1963; Hughes, 1959; Flanders, 1960)

or pupil and teacher reports (Gordon and Adler, 1963) to examine similar phenomena. Many different scales have been developed to code teacher and pupil behavior (or, reported behavior); yet all have proceeded by constructing pre-set categories characterizing teacher behavior as either "good" or "bad" in reference to some theory of what constitutes good teaching, rather than discovering the characteristics of effective teaching from the investigation. This research, however, has not been successful in linking teacher behavior to pupil behavior or achievement: the results remain inconsistent and inconclusive. About the only thing that can be said is that there is no one "best" type of teacher (Boocock, 1972).

Currently, this type of research has focused on teacher expectancy effects. Since Rosenthal and Jacobson's (1968) experiment on teacher definitions and pupil ability, there have been numerous experimental and observational studies of expectancy phenomena. In a recent comprehensive review of this research, Brophy and Good (1974) argue that the lack of strong findings can be attributed to the fact that these studies do not capture the complex interactions that occur within classrooms. Brophy and Good recommend more naturalistic observation studies using such observational instruments as their Dyadic Interaction Observation System which focusses on the qualities of dyadic interactions between pupil and teacher. Unfortunately, by concentrating on properties of dyadic relationships an entire set of social behavior that occurs within classrooms is ignored. For example, during a lecture only a small proportion

of interaction occurs strictly within dyads; the teacher often addresses the entire class. Surely teacher behavior during these times will influence schooling outcomes. In fact, it has been demonstrated that an important socializing function of schools--the teaching of certain value orientations--is accomplished during periods when the teacher is giving task instructions to the entire class (LeCompte, 1974). However, even in those situations in which a teacher interacts directly with only one pupil, others may participate in and be influenced by that interaction. Classrooms are public places. When a pupil is praised or punished it is often in the presence of others; this most certainly affects those observing.

Moreover, the presence of others also affects teacher-pupil dyadic interactions. Recent research on teacher authority indicates that the size of instructional groups, specified by the activity structure utilized, influences the types of sanctions teachers can use during control situations (Bossert, 1976). When the organization of instruction divides the class into small groups or individualized projects, a teacher has more discretion in applying classroom rules than when the entire classroom group is together. A teacher can provide special treatment to individual pupils without threatening the jural order of the entire classroom because such treatment is less visible to others when pupils are working separately.[4] Dyadic interactions, then, influence and are influenced by the organizational properties of the classroom settings and represent only one aspect of the social organization of a classroom, or any learning environment.

Because of the emphasis on dyadic interactions without a concern for the social organization in which they occur, teacher-pupil dyadic interaction studies have not been able to explain differences in pupil behavior and achievement. After all, a classroom is much more complex than the sum of discrete dyadic interactions.

Furthermore, the focus of educational research on the teacher-pupil dyad is misleading. It places considerable, if not total, responsibility for the educational process on teacher behavior. Certainly much of what occurs in classrooms is teacher organized. However, there is evidence to suggest that teacher behavior is not entirely self-initiated but, in part, structured by organizational properties of the school and its curriculum. Larkin (1973), Bossert (1975), and Metz (forthcoming) have argued that certain structural arrangements of schools, such as instruction organization and tracking, influence teachers' classroom behavior. These works suggest that teachers adopt similar teaching "styles" when placed in similar situations despite distinctive differences in their pedagogical ideology and overall use of particular instructional techniques. In addition, many of the newest curriculum innovations involve little teacher interaction with the learner; yet properties of the school's or classroom's social organization, other than teacher-pupil dyadic interactions, must affect the learning process. Using the teacher-pupil dyad as the unit for analyzing social processes in learning environments ignores more complex effects occurring within an educational setting.

Of course, this is not to say that studying dyadic interactions is fruitless. Many of the studies that have analyzed the dyadic unit provide interesting data on schooling processes. However, the dyad must be placed within the context of broader social organizational characteristics of the learning setting in order to provide an understanding of the effects of schooling processes on children (and teachers as well).

One area of school research--the school climate studies--has considered some of the implications of non-dyadic interactions on schooling outcomes. Most of this research has focused on peer networks within secondary schools in order to examine patterns of college aspirations and achievement motivation. While other aspects of school climate, such as faculty values and orientation to performance, have been shown to have some effect on student's aspirations, peer group normative and interpersonal influence systems are the most powerful school-level predictors of aspirations (Coleman, 1961; McDill and Rigsby, 1973). Norms and value systems are important aspects of the social organization of a school and must be examined when analyzing schooling effects. Unfortunately, the effects reported by these studies remain quite small: This is not because school effects themselves are small, but that these studies use a somewhat naive view of school social organization.

First, most of these studies have characterized school climate as if a school had but one climate in which all pupils participated equally. Anyone familiar with peer group networks

in secondary schools knows that several different student groupings exist in each school. Tracking by academic achievement and curriculum itself creates several fairly distinct peer networks, each with a distinct set of norms and values. Certainly many of the norms and values are shared, and one group may dominate. However, aggregating data on student responses at the school level masks the amount of variation within schools and the effects that subgroups may have on pupil achievement and aspirations. (See Wallace, 1965.)

Second, this research has ignored the sources of norms and values that create school climates. Values and norms do not develop in a vacuum, rather they are influenced by the activities and sanctions, basic elements of any social organization, that exist within a school. Coleman (1961) was quite aware of the importance of activities and sanctions in forming peer group norms when he suggested the creation of academic teams to legitimize achievements orientations. Until recently, however, few school researchers have examined the consequences of these social organizational elements on peer group formation and teacher-pupil interaction. DeVries and Edwards' (1973; 1974) work on reward structures and team learning situations has shown that team organized tasks influence pupil cooperation, cross-race, and cross-sex friendship formation. Task and reward structures, therefore, must be detailed when examining the formation and influence of student values and norms on behavior and academic performance.

One further critique: Research on schooling has consistently

ignored non-achievement outcomes. Almost every study of teacher-pupil interaction or classroom processes has examined achievement or achievement-oriented aspirations. Technical socialization is an important aspect of schooling; yet socialization into cultural norms and values is also an important function of the school. Despite a strong concern for the moral outcomes of schooling on the theoretical level (Durkheim, 1961; Waller, 1967; Dreeben, 1968), few analyses of classroom processes have examined these outcomes. Research on the structure and process of learning environments must examine such moral socialization outcomes as the learning of cooperation, competition, independence and self-direction, and the development of moral autonomy in children.

In summary, then, research on classrooms and other learning environments has provided few models for the analysis of the structure and processes of schooling. By focusing on dyadic interactions or only on one aspect of social organization (e.g., peer networks or reward systems) school research has overlooked the complex interrelationships between structural properties and social processes in learning settings.

A Sociological Model of Learning Environments

What should a model for understanding schooling processes take into account? While it is impossible to predict all factors and interrelationships that may be involved, it is possible to suggest a general framework that indicates the

linkages between structural characteristics and social processes in learning settings as well as the consequences of these for learning outcomes. Figure 1 presents this first-order model.

Figure 1 about here

As this model indicates, social relationships, those between teacher and pupil and among peers, develop within the context of patterns of interaction specified by the organization of activities and evaluation that structure the learning environment. While personal characteristics influence patterns of interaction to some extent, these are mediated by the structural arrangements which organize individual and group behavior within a setting. Structural characteristics of the organization of instruction determine not only the frequency of interaction among various participants but also the set of behavior (roles) each may assume. For example, teacher authority may be more a function of the classroom activity scheme than personality characteristics of the teacher. "Styles" of teacher authority have often been attributed to such personal factors as tolerance for ambiguity and degree of authoritarianism. However, recent research indicates that authority types are associated with classroom task organizations (Bossert, 1976). It was found that different task activities created distinctive situations of classroom management. This, in turn, influenced the types of sanctions a teacher could employ and, hence, the type of authority exercised in the classroom. While each of

the teachers in this study tended to rely on one type of activity and used the authority type appropriate to it, every teacher shifted the basis of his authority when a different activity organization was used. Rather than purely expressing teacher personality, authority types are also a consequence of patterns of interaction specified by the classroom activity organization. Other relationships could be outlined: structural arrangements within schools and classrooms, like departmentalization, tracking, particular acitivty schemes, and the organization of staff roles, certainly affect teacher-pupil, peer, and staff relations. The structural characteristics of a learning environment, therefore, are important factors shaping social processes. The social relationships that develop within a learning setting are influenced by its structural arrangements.

How do social relationships affect learning outcomes? In this area there is certainly no lack of research examining relationships between types of social interactions and learning. The vast literature on personal influence and reference groups provides many models for analyzing the effects of dyadic and group interactions on socialization outcomes.[5] Here, the analysis of teacher-pupil dyads, teacher expectations, peer group networks, and school climates become important. Characteristics of the teacher-pupil relationship (e.g., leadership role, empathy, sanctioning, and evaluations) and the pupil subculture (e.g., values and norms related to achievement, competition, cooperation, and the stratification of within school or classroom subgroups) should have important

effects on schooling outcomes. Keeping with the previous example on authority, it has been argued that the type of teacher authority has a significant impact on achievement (Bidwell, 1970; Spady, 1974). Because of pupils' involuntary recruitment into schools, teachers must establish rapport and trust between themselves and their pupils in order to provide classrooms conducive to achievement. Teachers who rely primarily on the exercise of institutional authority will not be able to develop affective bonds that promote willing compliance, motivation to learn, and, hence, achievement among their pupils. "[S]tudent commitment, development, and achievement will be maximized when the authority base of the classroom is legitimated by teacher behavior that is both charismatic and expert" (Spady, 1974, p. 63). Authority type, then, is an important aspect of the teacher-pupil relationship which can influence schooling outcomes. Other characteristics of teacher-pupil and peer relations should also have important schooling effects, particularly when they are analyzed within the context of the social organization of the interaction setting (e.g., the dyad in the larger social organization of the classroom and the school climate within the stratified network of tracking systems or other sub-groupings). Learning occurs within the context of these social relationships and is influenced by the forms interactions take.

A sociological examination of schooling processes, therefore, must discover how particular structural characteristics of a learning setting affect the social relationships that

develop in it and how different social relationships influence technical and moral socialization within schools. In other words, a complete model of the learning environment must detail the social organization and its consequences.

A Research Model

What type of information, then, is needed to describe the social organization of learning environments? Certainly research that relies on school-level aggregate measures will not provide adequate information. As I have suggested, this type of research does not take into account within-school groupings and the distinctive social organizations these may have. Examinations of dyadic interaction characteristics will also fail to provide adequate information because they do not consider consequences of the interactional setting for dyadic relationships. What is needed are naturalistic studies sensitive to social organizational processes. Case studies in a variety of learning environments--ones which examine central features of structural arrangements and their consequences for social relationships and learning outcomes--would be very helpful. There are several good examples: Rist's (1970) examination of teacher expectations, Smith's (1968) treatment of teacher decision-making, and the recent use of ethnomethodological techniques in studying testing situations (Mehan, 1974) provide models for the case study approach. Unfortunately, the major drawback of these studies is that they have not presented data adequate for comparative analysis. None have explicitly indicated the structural

arrangements (e.g., activity organization or evaluation system) characteristic of the classrooms they studied. Without such common information, future case studies will not be able to confirm or modify results presented in past studies: each study will represent a new case. Therefore, one goal of research on learning settings should be to provide detailed descriptive data on social organization. This will establish a data base, currently lacking, which will allow for comparative analysis and model building from multiple cases. Of course, an even better approach would be to provide information for the common data base and use a comparative case design within each study.

In addition to naturalistic, comparative case studies, longitudinal data is extremely important for understanding social processes in learning environments. Few studies have employed longitudinal designs; consequently, little data on natural change processes or learning outcomes that develop over several years is available. Studies of curriculum innovations and other structural changes should examine long-term responses in school social organization in order to adequately describe their effects. Studies of socialization outcomes, particularly moral outcomes, must view the development of these over the context of several years, as it seems highly unlikely that norms of cooperation, competition, independence, and self-direction emerge in a single year for most pupils. Longitudinal data are necessary for tracing learning processes and should be an important part of

research on learning environments.

The ideal model for research on the structure and process of learning environments, then, would involve a longitudinal, comparative case study design which focuses on the relationship between several structural properties of learning settings, their effect on social relationships that develop, and the consequences of these for one or more learning outcomes. Unfortunately, there are no examples of this model in educational research.[6] Until a solid base of information on social process in learning settings is obtained, however, the study of schooling will continue to shed little light on the learning process itself.

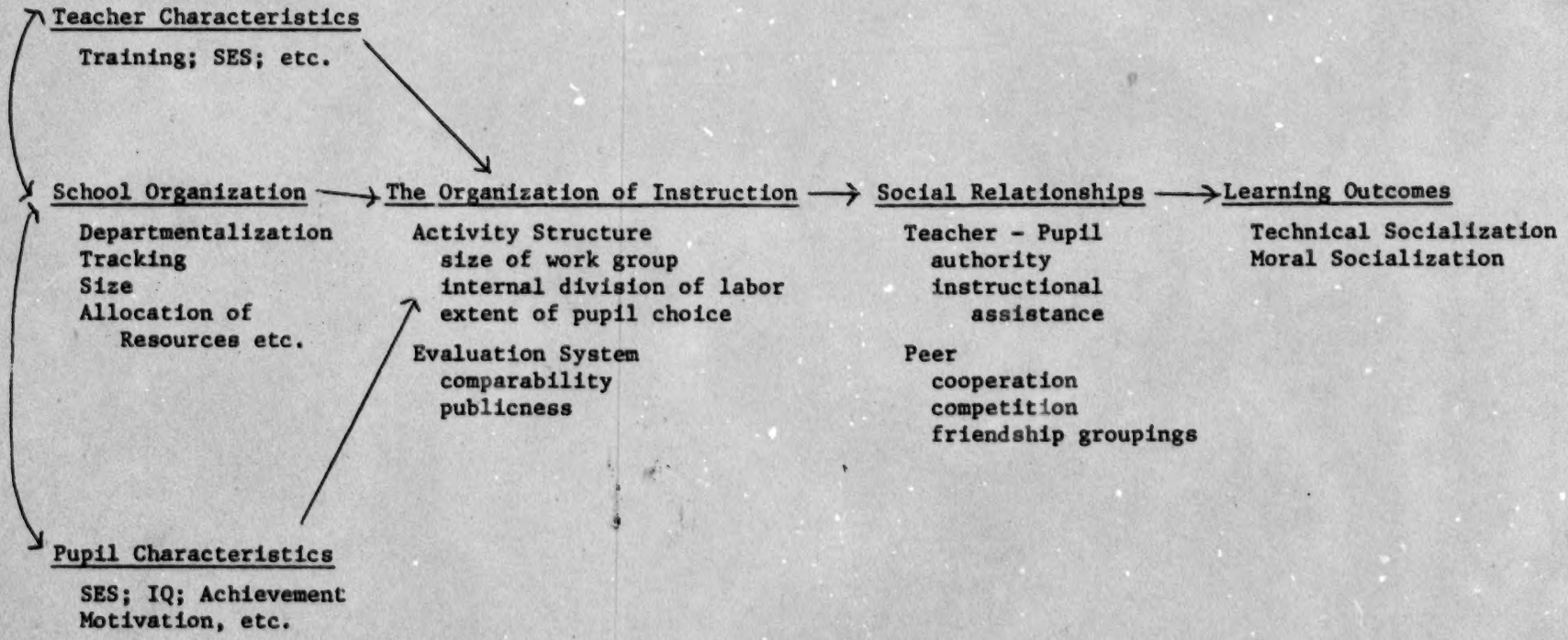

Figure 1: The Structure of Learning Environments

FOOTNOTES

1. See Bidwell (1974).

2. While I shall focus on the school, it is only one example of learning environments to which the proposed model applies.

3. Kounin (1970) has noted the common phenomenon of the "ripple effect" in his descriptions of teachers' control behavior.

4. Also note Gordon's (1957) and Waller's (1967) descriptions of the effects of peers on a pupil's classroom behavior.

5. Bidwell (1972) has written an excellent review of this research in his examination of the moral learning outcomes of schooling.

6. Perhaps Becker's (1961) study of medical students is the closest to this model. There are good examples, though, among field research studies in sociology: See Glaser and Strauss (1965 and 1967), Suttles (1968), and Sayles (1958).

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